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Embedding integrated mental health assessment and management in general hospital settings: feasibility, acceptability and the prevalence of common mental disorder

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ABSTRACT

Objective: To assess the feasibility and acceptability of routine web-based screening in general hospital settings, and describe the level of common mental disorder.
Method: A service development platform to integrate mental and physical healthcare was implemented in six specialties (rheumatology, limb reconstruction, hepatitis C, psoriasis, adult congenital heart disease (ACHD), chronic pain) across three general hospitals in London, UK. Under service conditions, patients completed a web-based questionnaire comprising mental and physical patient-reported outcome measures, whilst waiting for their appointment. Feasibility was quantified as the proportion of patients who completed the questionnaire. Acceptability was quantified as the proportion of patients declining screening, and the proportion requiring assistance completing the questionnaire. The prevalence of probable depression and anxiety was expressed as the percentage of cases determined by the Patient Health Questionnaire-9 and Generalised Anxiety Disorder Questionnaire-7.
Results: The proportion of patients screened varied widely across specialties (40.1–98.2%). The decline rate was low (0.6–9.7%) and the minority required assistance (11.7–40.4%). The prevalence of probable depression ranged from 60.9% in chronic pain to 6.6% in ACHD. The prevalence of probable anxiety ranged from 25.1% in rheumatology to 11.4% in ACHD.
Conclusion: Web-based screening is acceptable to patients and can be effectively embedded in routine practice. General hospital patients are at increased risk of common mental disorder, and routine screening may help identify need, inform care and monitor outcomes.

1. Background

The relationship between mental and physical illness is complex and bidirectional. Poor mental health is associated with increased risk of physical illness, and poor physical health confers an elevated risk of mental illness, most commonly depression and anxiety. Approximately 30% of the UK population have a long-term condition, and of those, around 30% have a concomitant mental disorder [1,2]. The overlap of mental and physical illness makes the management of both more complicated and costly. Physically ill patients with comorbid mental health problems experience elevated symptom burden [3], lower adherence to treatment [4], impaired quality of life [5], poorer prognosis [6,7] and increased mortality [8,9]. They also use outpatient services more frequently, and experience more hospital admissions and primary care consultations [10–12]. In the UK, treatment of physically ill patients with co-morbid mental health problems adds an estimated £8–13 billion to the annual National Health Service (NHS) expenditure on long-term conditions [13].

There is good evidence that common mental disorders can be effectively treated in people with a physical health condition. Recent meta-analyses of pharmacological and psychological interventions for depression in physical illness have yielded effect sizes similar to those seen in people without physical illness [14,15]. There is also evidence that integrated mental healthcare positively impacts physical health outcomes [16], reducing service use and healthcare costs [17,18]. However, psychological care is often absent in physical healthcare settings, and mental disorders frequently go undetected and untreated [19–21]. In the care of long-term conditions, physical

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health outcomes are typically prioritised over mental wellbeing and quality of life [22]. Stigma attached to mental illness may inhibit patients from spontaneously disclosing psychological distress, and clinicians report feeling less comfortable enquiring about emotional concerns [23]. A lack of confidence, time or resources may contribute to clinicians' reticence to probe patients' psychological problems. Even when problems are identified, physical healthcare teams are often ill-equipped to provide effective care, having received little or no training in mental healthcare.

The case for mainstream mental health assessment and support for people with long-term conditions has been put forth in numerous recent policy reports [13,24–29]. These emphasise the need for training in basic mental health skills for physical healthcare professionals, increased investment in liaison psychiatry services, and routine outcome measurement to capture the value of mental healthcare and inform commissioning. The UK National Institute for Health and Clinical Excellence recommends routine screening to improve identification of mental disorders in chronic illness, alongside a management strategy to provide care and follow-up [30]. Yet, despite guideline recommendations and a growing body of supporting evidence [16,31], implementation of integrated care approaches has been slow and patchy.

This paper describes the design and implementation of a novel integrated care initiative introduced by King's Health Partners (KHP) in 2011. KHP is an Academic Health Science Centre in London, UK, comprising a leading research and teaching university (King's College London), two NHS Acute Hospital Trusts (Guy's and St Thomas' NHS Foundation Trust (GSTFT), King's College Hospital NHS Foundation Trust (KCH) and an NHS Mental Health Trust (South London and Maudsley NHS Foundation Trust). *Integrating Mental & Physical healthcare: Research Training and Services (IMPARTS)* [32] is a service development platform designed to support clinical teams in providing timely, tailored, evidence-based care to patients with long-term conditions. The aim is to develop a model of service delivery that facilitates integrated care, whilst simultaneously promoting research.

The IMPARTS programme has five core components:

1) *Web-based screening:*
IMPARTS has developed a web-based screening interface, which enables routine measurement of mental and physical health outcomes, with real-time feedback to guide clinical care. Screening patients electronically before their consultation results in more productive use of waiting room time, more efficient assessment, improved recognition of patient concerns, and more actions being taken in relation to these concerns [33,34]. Computerised screening has been shown to be acceptable to patients and clinicians [35,36], and studies suggest that regular screening with feedback of results may improve patient outcomes [16,34,36]. However, evidence that routine screening can be successfully implemented under true service conditions is scarce. Most studies have relied on researchers to administer screening and cannot therefore comment on the feasibility of routine implementation [34,37,38]. IMPARTS aims to translate research findings and guideline recommendations into real-world clinical practice. To be sustainable, outcome measurement must be embedded within existing infrastructure and "owned" by practitioners rather than researchers.
2) *Care pathway development:*
IMPARTS develops robust care pathways to guide management of mental health problems identified through screening. Gilbody et al. showed that depression screening in non-mental health settings was associated with increased identification of depression, but had no impact on patient outcomes [39]. However, screening was evaluated as a stand-alone action without a care pathway or management plan. To impact health outcomes, evidence indicates that enhanced management and follow-up is needed [16,30,40]. The IMPARTS system is designed to support management and follow-up of common mental disorder. IMPARTS devises tailored mental health care pathways to ensure patients identified through screening receive appropriate care. These provide recommendations on interpreting screening output, making referrals and assessing suicide risk. Screening occurs at regular intervals so that changes in symptoms and functioning can be captured and care plans adjusted accordingly.
3) *Training in core mental health skills:*
Successful mental health screening and signposting depends on clinicians being confident in interpreting outcome measures, and engaging patients in discussion about psychological problems. Scant provision of liaison psychiatry and clinical/health psychology services means that responsibility for detecting and managing mental health problems often falls upon non-specialists. Given that approximately one in three people with chronic illness will have a probable mental disorder, it is critical that generalists are equipped with core skills in psychological care [24]. Even brief training interventions have been shown to increase clinicians' confidence in dealing with mental health problems [41]. IMPARTS has developed a mental health skills training package for physical healthcare teams. Popular topics include: eliciting concerns and discussing distress; how and when to refer to a mental health specialist; encouraging adherence; assessing risk; and problem-solving. Training is delivered in flexible, interactive sessions scheduled to accommodate the entire team, from consultant physicians to healthcare assistants.
4) *Bespoke self-help materials*
Although there are many self-help materials available for depression and anxiety [42,43] and some excellent resources for people with specific long-term conditions [44], few bridge the gap between mental and physical health. If self-help interventions do not resonate with patients' experiences, their efficacy and acceptability may be diminished. IMPARTS has developed a portfolio of bespoke self-help materials which address patients' psychological needs in the context of their illness. These materials are developed with patient and clinician input, produced in a written format and use a theoretical model. They are tailored to the nuances of the particular physical condition and designed to be used by non-specialists to supplement discussions about psychological issues and identify coping strategies. Studies have shown that self-help interventions are more effective if provided with guidance from a healthcare professional [45]. Thus, clinicians participating in the IMPARTS programme are taught how to engage patients in discussion about the key concepts.
5) *Research infrastructure*
Routine outcome measurement enables collection of data for audit and research. IMPARTS has developed a pseudonymised research database combining patient-reported outcomes from screening, with clinical and demographic data from the hospital electronic patient record (EPR). This database enables audit of clinical practice against national standards of care, and evaluation of patterns of need and service usage to inform commissioning. It also provides a rich resource for hypothesis-driven observational research investigating the prevalence,

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associations, interactions and outcomes of mental and physical illness. The IMPARTS framework simplifies the process of participation in research, integrating data collection into routine practice and providing generic ethical approval for analysis of pseudonymised data collected via the IMPARTS platform (NRES Ref: 12/SC/0422). It also provides a platform for identifying and recruiting patients to clinical trials. A question can be added at the end of the questionnaire seeking patients' consent for a researcher to contact them to discuss participation in future research projects. Those who agree are added to a case register of potential research recruits.

These five components provide the infrastructure to embed mental health assessment within an integrated system of care, encompassing training, care pathway development and research. Identifying distress is just one link in a chain of actions needed to manage mental disorders in medical settings. IMPARTS facilitates a synergistic system of care that supports each link: training, detection, assessment, appropriate referral, intervention and evaluation.

This paper is the first in a series to explore the feasibility of the IMPARTS programme and focuses on the first of the five components. We aim to describe: (1) the feasibility and acceptability of routine web-based screening offered under service conditions and (2) the level of psychological morbidity and substance misuse identified.

2. Method

2.1. Procedure

Patients attending general hospital clinics are given an information sheet inviting them to complete a questionnaire on a touch-screen e-tablet whilst waiting for their appointment. After logging in using their hospital identification number, patients complete a series of outcome measures, tailored to their condition. Outcome measures are adapted using branching structures to make them as short as possible. The data captured populate the electronic patient record (EPR) in real-time, meaning that the results are immediately available to the clinician prior to consultation. The system is flexible and can be programmed to administer different measures depending on variables such as gender, diagnosis or the date of last assessment.

The data captured inform automated algorithms in EPR, which operationalise care pathways agreed with the clinical team. Care pathways vary according to available resources, but may include referral to community services, or mental health services embedded within the acute trust. Algorithms are based on symptom severity and the presence of suicidal ideation.

2.2. Setting

IMPARTS was piloted in rheumatology (KCH) in 2011, initially in the nurse-led treatment clinics, before being extended to all clinics in 2012. Patients are screened before every appointment, and the typical patient attends once every 3–6 months. A wealth of evidence links rheumatological disorders with increased risk of mental illness [46], but there were also pragmatic reasons for selecting this service as the pilot site: an established working relationship with an IT developer able to develop the screening interface, and a liaison psychiatrist embedded within the clinical team.

IMPARTS expanded organically, spurred by the enthusiasm of particular clinical teams. In 2012, it extended to limb reconstruction and hepatitis C (KCH). The limb reconstruction service sees patients with severely injured or deformed limbs, and screening occurs every three months. In the hepatitis C, screening takes place in the direct-acting antiviral treatment clinic. Patients attend as frequently as once per week and are screened on every occasion. In 2013, IMPARTS extended to the adult congenital heart disease (ACHD) service, the INPUT pain management programme, and the psoriasis clinic at GSTFT. The ACHD service screens patients annually at their review appointment. The INPUT pain service is a 4 week residential programme for patients with chronic pain unresponsive to medical treatment. Patients are screened at admission and discharge. Patients attending the psoriasis clinic are screened approximately every three months. More recently IMPARTS was implemented in Multiple Sclerosis, Cranioplasty and Cough (KCH), and Kidney Transplant, Dialysis, and Teenage and Young Adult Cancer (GSTFT)—however, the data are not presented in this paper because the number of patients assessed so far in these services is small.

2.3. Measures

Outcome measures were selected in consultation with the clinical teams to capture data pertinent to their patient group. IMPARTS has developed a menu of questionnaires, including measures of mental health and substance use, disease-specific quality of life, disability, physical symptoms, illness perceptions, and treatment adherence. The mental health and substance use screening tools are described below.

Depression was assessed in all services using the Patient Health Questionnaire-9 (PHQ-9) [47], which has been shown to have good sensitivity, specificity [48] and test-retest reliability [49], and has been widely validated in physically ill populations [50,51]. Criteria for probable major depression (MDD) were met if the patient reported low mood or loss of interest plus at least five out of nine symptoms in total, for more than half the days in the last two weeks. Suicidality was assessed by item 9 of the PHQ-9 and defined as having "thoughts that you would be better off dead or of hurting yourself in some way" more than half the days in the past two weeks.

Anxiety was assessed using the Generalised Anxiety Disorder Questionnaire-7 (GAD-7) [52], which has been shown to have good reliability, and criterion, construct, factorial and procedural validity [52]. Criteria for probable generalised anxiety disorder (GAD) were met if the patient scored ≥ 10 on the GAD-7.

Probable post-traumatic stress disorder (PTSD) was assessed in limb reconstruction only, and defined as a score of 4 on the Post Traumatic Stress Disorder Checklist-4 (PCL-4) [53].

Alcohol and drug misuse were assessed in limb reconstruction and hepatitis C. Alcohol misuse was assessed using the Alcohol Use Disorders Identification Test (AUDIT) [54]. Drug misuse was assessed using a bespoke measure, since a suitable, validated tool was not available. Probable drug dependence was defined as an affirmative response to the question "In the past year have you used any drug or medication to the extent that you felt that you needed it or were dependent on it?" Patients were then asked "Would you like help to stop using any drug or medication?". Smoking was assessed in all services except hepatitis C with the question "Do you currently smoke?"

2.4. Data analysis

Feasibility was quantified as the proportion of patients attending their appointment who completed the IMPARTS questionnaire. Feasibility data were available for four services: rheumatology, limb reconstruction, hepatitis C and psoriasis. Acceptability was quantified as: (1) the proportion of patients declining screening, and (2) the proportion of patients requiring assistance completing the questionnaire. Data on the proportion of patients who declined screening were available for rheumatology, limb reconstruction, hepatitis C and psoriasis, and data on the proportion of patients requiring assistance completing the questionnaire were available for rheumatology and hepatitis C.

Whether or not process data on feasibility and acceptability were collected was influenced by the characteristics of the clinic and the

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resources available to facilitate screening. In rheumatology, data on feasibility and acceptability relate to the pilot period, during which screening was facilitated by the IMPARTS project team. When the nursing team assumed responsibility for screening, they did not have sufficient time to record process data in addition to their clinical duties. Similarly, collection of process data in limb reconstruction was possible initially when screening was facilitated by the service coordinator, but ceased when the clinical team took over. Pharmacy students facilitated screening in hepatitis C, and did collect process data. In psoriasis, pain, and ACHD, the clinical team facilitated screening, but process data were collected in psoriasis only.

The prevalence of probable depression, anxiety, PTSD, alcohol, drug misuse and smoking was expressed as the percentage of cases determined by the PHQ-9, GAD-7, PCL-4, AUDIT, drug dependence and smoking questionnaire, respectively. Prevalence estimates were calculated from baseline screening responses. Denominators for different measures vary due to patients not completing the full questionnaire, or measures being added to the questionnaire at a later date.

3. Results

3.1. Feasibility and acceptability of screening

The proportion of patients completing the IMPARTS questionnaire varied widely across the services studied, from 98.2% in psoriasis to 40.1% in hepatitis C (see Table 1). The reasons why patients were not screened also varied. In limb reconstruction and hepatitis C, the most common reason was a lack of time (24.3% and 54.8% respectively). By contrast, fewer than 3% of patients were missed for this reason in psoriasis and rheumatology. The proportion of patients declining to complete the questionnaire was low, ranging from 5.1% in rheumatology to 0.6% in psoriasis. A conservative estimate of acceptability was calculated by excluding patients who were unlikely to have been invited to complete the questionnaire (i.e. those not screened due to lack of time, insufficient English, staff shortage etc). Refusal rates remained less than 10%, with hepatitis C having the highest proportion of decliners (9.7%). In rheumatology and hepatitis C, the proportion of patients declining increased at subsequent encounters though the large majority continued to complete the questionnaire. At the third encounter, the decline rate was 19% in rheumatology and 36% in hepatitis C. There was also wide variation in the proportion of patients needing assistance completing the questionnaire (40.4% in rheumatology versus 11.7% in hepatitis C). In both services, lack of confidence with IT was the most common reason for requiring assistance.

Table 1
Proportion of patients screened and proportion requiring assistance at first encounter

	Rheumatology	Limb Reconstruction	Hepatitis C	Psoriasis
Attended appointment	297	272	192	165
Screened	260 (87.5%)	170 (62.5%)	77 (40.1%)	162 (98.2%)
Reason not screened*:				
Patient declined	15 (5.1%)	7 (2.6%)	7 (4.2%)	1 (0.6%)
Not enough time	7 (2.4%)	66 (24.3%)	92 (54.8%)	1 (0.6%)
IT problem	8 (2.7%)	n/a	2 (1.2%)	1 (0.6%)
Insufficient English	5 (1.7%)	2 (0.7%)	n/a	n/a
Space shortage	n/a	18 (6.6%)	n/a	n/a
Staff shortage	n/a	9 (3.3%)	n/a	n/a
Disability	1 (0.3%)	n/a	2 (1.2%)	n/a
Other	1 (0.3%)	n/a	n/a	n/a
Needed assistance with screening	105 (40.4%)	No data	9 (11.7%)	No data
Reason for assistance:				
Lack of confidence with IT	68 (26.2%)	No data	7 (9.1%)	No data
Insufficient English	16 (6.2%)	No data	2 (2.6%)	No data
Disability	21 (8.1%)	No data	n/a	No data

* Data on reason not screened available for 168 of the 192 hepatitis C patients.

3.2. Psychological morbidity identified via screening

Table 2 presents the prevalence of mental health problems and substance misuse in the services where IMPARTS has been implemented. Probable MDD was most common in the pain clinic (60.9%). The prevalence of MDD was similar in rheumatology (23.2%), limb reconstruction (22.1%), and hepatitis C (18.5%), notably lower in the psoriasis clinic (10.8%), and lowest of all in ACHD (6.6%). Just over a third of patients presenting in the chronic pain clinic met PHQ-9 criteria for severe depression, and 17.4% screened positive for suicidal ideation. After pain, severe depression was most common in rheumatology, and suicidal ideation was most common in limb reconstruction.

The prevalence of probable generalised anxiety disorder (GAD) ranged from 25.1% in rheumatology to 11.4% in ACHD. The highest prevalence of severe anxiety was in limb reconstruction (12.7%). Comorbid depression and anxiety was most common in rheumatology (16.3%), with 70% of the patients who screened positive for probable MDD also screening positive for probable GAD. A similar level of comorbidity was seen in limb reconstruction. In hepatitis C, the prevalence of GAD was lower relative to MDD, and comorbidity was reduced. In psoriasis and ACHD, GAD was comparatively common compared to MDD.

In both limb reconstruction and hepatitis C, the prevalence of probable alcohol dependence was low—1.8% and 0%, respectively. Levels of harmful drinking were also low. More patients screened positive for hazardous drinking, particularly in limb reconstruction (10.2%). As expected, probable drug dependence was most common in hepatitis C (17.2%).

Nine percent of patients screened in limb reconstruction met criteria for probable PTSD. Road traffic accidents are the most common reason for treatment, but the service also frequently sees servicemen and women injured in combat.

4. Discussion

IMPARTS aims to facilitate integrated care by equipping clinical teams with the infrastructure and skills to identify, manage and monitor mental disorders and their impact on physical health and functioning. The extent to which this ambition is realised depends on how successfully IMPARTS is integrated into routine practice. Our feasibility and acceptability data indicate wide variation between services. Whilst screening was very successfully embedded within the dermatology service (98% screened), in hepatitis C implementation was more challenging (40% screened). Screening rates reported in the existing literature also vary widely [55,56]. An initiative to implement routine use of the Edmonton Symptom Assessment Scale for lung cancer patients in Ontario, Canada, reported screening rates ranging from 20–90% depending on the centre [57]. Divergence in the proportion of patients screened may be due to differences in service organisation, environment, culture, size, or staffing levels, as well as the degree of team "buy-in" [58]. It should be noted that in services where staff were not able to record process data, time constraints may have also impacted the proportion of patients screened.

The proportion of patients agreeing to complete the IMPARTS questionnaire also varied, though was consistently higher than has been achieved for research samples in similar settings [33,36]. Decline rates may be affected by the characteristics of patients attending the service, or by the way screening is introduced to the patient. Decline rates were lower when a healthcare professional approached the patient, rather than a student or volunteer. As has been observed

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Table 2
Prevalence and severity of psychological morbidity at first screening encounter

	Rheumatology	Limb reconstruction	ACHD	Hepatitis C	Chronic pain	Psoriasis
Depression (PHQ-9)	*n*=785	*n*=276	*n*=273	*n*=103	*n*=294	*n*=332
Probable MDD	182	61	18	19	179	36
	23.2% (20.2–26.1)	22.1% (17.2–27.0)	6.6% (3.6–9.6)	18.5% (10.8–26.1)	60.9% (55.3–66.5)	10.8% (7.5–14.2)
Severe depression (score 20–27)	72	21	3	5	100	15
	9.2%	7.6%	1.1%	4.9%	34.0%	4.5%
Moderate depression (score 15–19)	73	30	12	8	64	17
	9.3%	10.9%	4.4%	7.8%	21.8%	5.1%
Mild depression (score <15)	37	10	3	6	15	4
	4.7%	3.6%	1.1%	5.8%	5.1%	1.2%
Suicidal ideation	46	18	6	3	51	14
	5.9%	6.5%	2.2%	2.9%	17.4%	4.2%
Anxiety (GAD-7)	*n*=780	*n*=276	*n*=271	*n*=100	n/a	*n*=330
Probable GAD	196	57	31	14	n/a	48
	25.1% (22.1–28.2)	20.7% (15.9–25.5)	11.4% (7.6–15.3)	14.0% (7.1–20.9)		14.6% (10.7–18.4)
Severe GAD (score ≥15)	91	35	16	7	n/a	29
	11.7%	12.7%	5.9%	7.0%		8.8%
Depression AND Anxiety	*n*=780	*n*=276	*n*=271	*n*=100	n/a	*n*=330
MDD AND GAD	127	42	12	9	n/a	29
	16.3% (13.7–18.9)	15.2% (11.0–19.5)	4.4% (2.0–6.9)	9.0% (3.3–14.7)		8.8% (5.7–11.9)
Alcohol misuse (AUDIT)	n/a	*n*=275	n/a	*n*=92	n/a	n/a
Any alcohol problem (score ≥8)	n/a	34	n/a	6	n/a	n/a
		12.4% (9.0–16.8)		6.5% (2.8–13.8)		
Alcohol dependence (score ≥20)	n/a	5	n/a	0	n/a	n/a
		1.8% (0.2–3.4)				
Harmful drinking (score16-19)	n/a	1	n/a	2	n/a	n/a
		0.4%		2.2%		
Hazardous drinking (score 8–15)	n/a	28	n/a	4	n/a	n/a
		10.2%		4.4%		
Drug misuse	n/a	*n*=215	n/a	*n*=58	n/a	n/a
Probable drug dependence	n/a	10	n/a	10	n/a	n/a
		4.7% (2.4–8.5)		17.2% (9.4–29.1)		
Would like help to stop using	n/a	5	n/a	7	n/a	n/a
		2.3%		12.1%		
PTSD (PCL-4)	n/a	*n*=267	n/a	n/a	n/a	n/a
Probable PTSD	n/a	24	n/a	n/a	n/a	n/a
		9.0% (6.1–13.1)				
Smoking	*n*=529	*n*=270	*n*=151	n/a	*n*=190	*n*=323
Currently smoke	84	42	15	n/a	60	70
	15.9% (12.8–19.0)	15.6% (11.2–19.9)	9.9% (5.1–14.8)		31.6% (24.9–38.2)	21.7% (17.2–26.2)

previously in oncology [56], there was a trend towards reduced participation at follow-up, particularly in hepatitis C, where the questionnaire was longest and patients were screened most frequently. The higher proportion of rheumatology patients requiring assistance completing the questionnaire probably reflects increased levels of disability and the more advanced age of the patient population, with older people tending to be less confident using IT [59]. Several previous studies have assessed patients' experience of computerised screening [38,60,61] but few have presented data on the proportion needing staff assistance, which is crucial in considering the resource implications of routine implementation.

Conclusions about feasibility and acceptability are constrained by our narrow definition of these outcomes. A more nuanced appraisal might include measurement of the impact of screening on consultation duration and staff roles and responsibilities, as well as interviews with clinicians and patients to elicit their experience of screening. Yet even with these additions, it would still only be possible to comment on the feasibility of screening, and the factors that enhance or inhibit implementation. As discussed previously, screening as a stand-alone intervention has limited utility—IMPARTS' remit is broader, aiming to embed mental health assessment within an integrated system of care that supports appropriate management and monitoring.

The prevalence data demonstrate increased risk of common mental disorder in a range of general hospital settings, and highlight the need for improved mental healthcare provision. Depression was most common in the chronic pain service at GSTFT. This is unsurprising given the stringent criteria for referral to the service, and the strong association between pain and depression [62]. Previous surveys conducted in chronic pain populations have yielded similarly high prevalence estimates [63]. The prevalence of depression in rheumatology, limb reconstruction, and hepatitis C was approximately twice that found in the general population [64,65]. The prevalence of depression in the psoriasis clinic was considerably lower, though still elevated compared to the general population. Though patients with ACHD face potential medical complications, they are generally asymptomatic, and this is reflected in a much lower prevalence of depression, equivalent to that seen in the general population.

The prevalence of anxiety followed a similar pattern to depression. Notable differences were the relatively low level of anxiety in hepatitis C, and the relatively high level of anxiety in psoriasis. In both limb reconstruction and hepatitis C, the prevalence of alcohol misuse was similar to that found in the local general population [66]. Intravenous drug use is a common cause of hepatitis C infection, and hence the prevalence of patient-reported drug dependence was elevated in this population. In limb reconstruction, the prevalence of PTSD was higher than that found in the local community [67], but similar to previous estimates in patients undergoing limb reconstruction surgery [68].

Our next step will be to undertake an evaluation of the other components of the IMPARTS package, and assess whether screening changes clinician behaviour and patient care. This will include a survey of patient and clinician experiences of the screening process, and an audit of EPR to assess fidelity to IMPARTS care pathways and determine the proportion of patients who receive appropriate intervention. We have already begun evaluating the usefulness of

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the IMPARTS training programme, looking at clinician satisfaction and self-reported changes in confidence and competence. Additionally, we plan to examine patients' and clinicians' experience of using the IMPARTS self-help materials, and assess the extent to which they are integrated into routine practice.

5. Conclusion

General hospital patients are at increased risk of mental health problems. The IMPARTS programme facilitates integration of mental and physical healthcare, and promotes research and audit as part of patient care. Preliminary data indicate that screening can be effectively embedded in routine practice. Further work is needed to evaluate its impact on clinical activity and outcomes.

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